

Predictors of Group Performance in a Police Criminal Investigation Department: the Role of Gender Homogeneity, Leadership and Team Characteristics

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Abstract The Netherlands' Ministry of Security and Justice has agreed on performance targets with the country's police departments. Introducing the targets created a shift to controlling performance in team management focus. This empirical study of police teams in Utrecht in the Netherlands ($N = 134$) focuses on the influence of leadership style, gender and psychosocial team factors when teams are required to achieve agreed performance objectives. We address calls in the literature for more research into (objective) measures relating to effective police leadership and existing (police) management practices. Gender homogeneity, a combination of charismatic, empowering and transactional leadership styles, and team members' awareness of team achievements were found to be relevant. The practical implications of these results are discussed.

Keywords Performance targets · Team characteristics · Leadership style

Introduction

This study examines how leader and team attributes influence a team's performance, or how well it achieves its targets (Baker 2002). This research focuses on areas which have a clear impact on the team outcomes that are relevant to the daily life of a police organization (Stewart 2010). Among the known predictors of impact referred to in the performance management literature are the extent to which (1) targets are clear and logical in relation to the associated primary process, (2) those involved find the targets motivating and credible, (3) the objectives are unambiguous and readily quantifiable, (4) the targets can be monitored, (5) the employees involved are able to influence the outcomes, (6) those concerned possess the minimum level of ability needed to achieve the objectives and (7) reward and achievement are related (Kaplan and Norton 1996, 2005).

In order to make performance more transparent and gain a firmer grasp of output, increasing attention is being devoted to accountability, with improved effectiveness and efficiency in mind. This trend within government is sometimes referred to as *new public management* (Hood 1995), and the aim is to make organizations more responsive and efficient. The output targets that since 2003 have been agreed annually by the Dutch Ministry of Security and Justice (formerly the Ministry of the Interior and the Ministry of Justice) and police departments have heightened the focus on performance. Senior officers have been urged to target police operations more precisely and tighten control over primary operational processes (Vollaard 2003). This study focuses on predictors that may explain one team's success in meeting performance agreements. In particular, it explores the influence of leadership behaviour and the characteristics of teams that are required to achieve agreed performance objectives (Early and Mosakowski 2000). While teams are assessed on performance indicators, research into how this can best be achieved within a

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police context is rare. In this study, we address calls in the literature for more research into objective measures of effective police leadership and existing (police) management practices (Pearson-Goff and Herrington 2014; Hogan et al. 2011). According to Hogan et al. (2011), despite the fact that the role of the middle manager is crucial in the police (Kingshott 2006; Engel 2000), there have been few studies conducted which examine the characteristics of effective police managers: “relatively little is known about the role that middle managers play in a policing context” (Hogan et al. 2011, p. 3). Yang et al. state that: “no previous studies have empirically analysed leadership competency and its impacts on police project performance” (Yang et al. 2012, p. 542; Vanebo et al. 2015). What is more, Pearson-Goff and Herrington (2014, p. 21) observe that: “...we still have little understanding of ‘what works’ in police leadership beyond what others perceive to be effective. We conclude by calling for the need for robust research and hope that researchers are spurred into undertaking work to establish objective measures of effective leadership, to link leadership behaviours to organizational outcomes...” The academically and practically relevant question is whether factors shown by research to be important, such as leadership style and a team’s psychosocial characteristics, also apply to management by performance in a police context. The main research question is the following: *Which leadership style and psychosocial characteristics improve team performance?*

The research design is set out below, following a description of the theoretical framework and statement of the hypotheses. The hypotheses were tested through a survey of the Utrecht Police Criminal Investigation Department, and this was combined with data from the Utrecht Police Regional Planning Office. The data were analysed using factor, correlation and mixed regression analyses. Finally, this report presents the conclusions, points for discussion and practical implications.

Theoretical Framework and Hypothesis Development

In this study, we build on earlier studies, such as those of Pearson-Goff and Herrington (2014; Herrington and Colvin 2015) and Hogan et al. (2011). We share the opinion of Hogan et al. (2011) that the role of the middle manager is not only challenging but is also considered one of the most important roles in policing. A number of empirical studies have demonstrated the importance of the manager’s role in policing (Hogan et al. 2011), but as far as we are aware, no study exists which addresses the influence of leadership and team characteristics on performance when teams are required to achieve agreed objectives based on ‘business performance’ criteria.

Leadership and Performance of Teams

The results of the study carried out by Hogan et al. (2011) can be used to begin to build up a picture of what an effective police manager looks like, at least from the subjective point

of view of Canadian police officers. Their study shows that effective managers have frontline experience, can motivate others, respect their fellow officers and are good role models for subordinates. In addition to this, effective managers possess high levels of personal maturity, are professional, have good interpersonal and communication skills and have received appropriate managerial training. Based on a systematic review of the research literature pertaining to police leadership, Pearson-Goff and Herrington (2014) conclude that there is some consensus as to what characterizes effective police leaders: ethical behaviour, trustworthiness, legitimacy, being a role model, communication, decision-making and the ability to think critically, creatively and strategically. Five key activities emerged as important for leaders to engage in: creating a shared vision, fostering organizational commitment, looking out for subordinates, driving and managing change and problem-solving. On the basis of the findings of these studies, leadership style and several team characteristics were selected as the basis for this research.

The main aspect of leadership behaviour explored in this study is the question of whether explicit result-based management through feedback from team leaders actually helps improve team results. Feedback is information on a person’s (or a team’s) performance, and consists of what someone is doing or has done, and how well they are doing or have done it (Sims et al. 1976; Schriesheim et al. 1999). It is important to receive feedback in order to permit a team to maintain behaviour that will allow it to meet targets. The key is to be able to adjust objectives and modify behaviour in order to achieve the desired objectives or performance indicators (Callister et al. 1999).

In addition to performance-based management, the influence of charismatic, empowering and transactional leadership styles was also explored (De Hoogh 2004). Research has shown that these three leadership styles are important predictors of a leader’s effectiveness (De Hoogh 2004). Cockcroft (2014) states that the operational context of much police work can be considered largely ‘transactional’ as opposed to ‘transformational’. Cockcroft’s conceptual article seeks to provide clarification on the way in which the concepts of transformational and transactional leadership relate to one another (see also Van Knippenberg and Sitkin 2013, and Deinert et al. 2015). Cockcroft argues that “there is a need to acknowledge that ‘policing’ covers a wide range of roles within increasingly complex organizational environments. As such, it is unlikely that one form of leadership will be appropriate for every set of organizational relationships” (Cockcroft 2014, p. 12). A charismatic leader succeeds in conveying a vision and giving employees a sense that they are working on a shared task. This type of leader shows that the organization’s values are central, displays self-confidence and leads by example. An empowering leader displays confidence in employees and encourages critical thinking and the expression of personal opinions, helping employees become independent and strong. A transactional

leadership style focuses on professional, task-oriented aspects, concentrating on the balance between mutual investment and its benefits: the leader makes clear to employees what they can expect in exchange for satisfactory performance. Effective leaders in particular often exhibit a mixed leadership style, in which aspects of different styles are combined, making it hard to determine their individual impact (Lievens et al. 1997; Shipper and Davy 2002; Yukl 2006; Den Hartog et al. 1997; De Hoogh 2004; De Hoogh et al. 2005b). However, it is possible to reach the conclusion that charismatic leadership builds on transactional and empowering leadership, since charismatic leadership reinforces the impact of empowering and transactional leadership (Judge and Piccolo 2004). This has prompted the following hypotheses on leadership style:

Team performance improves in line with the extent to which the team leader displays the following leadership style or leadership behaviour:

- Hypothesis 1.1: *Performance-based management*
- Hypothesis 1.2: *Charismatic leadership*
- Hypothesis 1.3: *Empowering leadership*
- Hypothesis 1.4: *Transactional leadership*.

Team Attributes and Performance

In addition to the team leader's influence, this study also investigates whether various team attributes might influence performance. As Vanebo et al. (2015, p. 22) conclude, a properly functioning team is essential: "The middle management must execute and stimulate team leadership in interaction with the frontline management to facilitate interpretation and translate the more general values into functional values". According to the research, relevant team attributes include psychological safety (Edmondson 1999), heedful interrelating (Weick and Roberts 1993), team diversity (Van Ewijk 2012; Mannix and Neale 2005), the extent to which the team has regular policing experience of the work to be carried out (Bass 1990, p. 703; Kennedy 1985), and team members' awareness of team performance (Kaplan and Norton 2005).

Psychological safety is "a shared belief that the team is safe for interpersonal risk taking" (Edmondson 1999, p. 354; see also Tynan 2005, p. 229). In other words, psychological safety exists where there is an open dialogue about mistakes and problems, members are given the opportunity to ask each other for help, everyone's skills and differences are valued, and team members feel able to raise taboo discussion topics (Kahn 2001; May et al. 2004, p. 15). Research has shown psychological safety to be an important predictor of learning behaviour (Edmondson 1999; Tjosvold et al. 2004), team and individual performance (Baer and Frese 2003; Edmondson 1999, p. 376), innovation (Edmondson 2002, p. 12) and employees' investment in their job role (May et al. 2004, p. 30).

Heedful interrelating is concerned with "a well-developed collective mind in the form of a complex attentive system" (Weick and Roberts 1993). Heedfulness is a necessary component of many team processes, such as those concerning the relationship between trust and team performance. In this regard, Weick and Roberts (1993) comment that: "Performance may require a well-developed collective mind in the form of a complex attentive system tied together by trust" (p. 378). Research conducted by Bijlsma-Frankema et al. (2008) has shown, for example, that heedfulness plays a mediating role in the relationship between trust and team performance. It is also important for team performance.

There is now greater awareness of the importance of organizations adapting to the diversity around them, and both private and public organizations have adopted specific policies to facilitate the inclusion of employees from different backgrounds (Van Ewijk 2012; Zhao et al. 2006). With respect to team diversity, this study focuses on the influence of gender diversity (Koeppel 2014). The general level of diversity (defined in terms of gender) is low and diminishes as police officers' rank increases: 22.1% of the officers in the Netherlands are female (Van Ewijk 2012). In general, research into team diversity has produced few clear findings (Jackson and Joshi 2004, p. 697; see also Webber and Donahue 2001; Jackson et al. 2003; Kochan et al. 2003). Diversity and performance do not always appear to go hand in hand. While some studies show a correlation between diversity and innovation, improved strategic decision-making and organizational performance, others find that diversity leads to more conflict, less social cohesion and higher employee turnover (Gonzalez and Denisi 2009; Jackson and Joshi 2004; Ragins and Gonzalez 2003; Tsui et al. 1992; Van Knippenberg et al. 2004; Richard et al. 2004; Sacco and Schmitt 2005). The same applies to research into the specific field of gender. Some studies conclude that mixed gender generates more conflict, less clear objectives and has a negative impact on team effectiveness. Other studies claim that gender homogeneity improves interaction and performance (Alagna et al. 1982; see also Turner 1987; Ibarra 1992). However, Kochan et al. (2003) conclude from their study that gender diversity has a positive impact, if any, on the team process. They say that this is consistent with results reported previously in the literature, which found that gender-balanced groups have more positive interactions than predominantly female or male groups (Hoffman and Maier 1961; Wood 1987). Most diversity research tends towards the pessimistic view that diversity encourages social division, conflict and horseplay. According to a very extensive review of diversity research carried out by Mannix and Neale (2005), this in turn leads to negative team performance.

Explanations for the above are provided in particular by the similarity attraction, social categorization and social identity theories. Empirical research supporting these theories shows that equality in terms of attributes such as attitude, values and gender promotes interpersonal appreciation and affiliation. A strongly negative effect is particularly evident in teams that

differ in multiple attributes (e.g. gender, age, experience, and culture): “our most striking finding was that team performance was lowest for teams with a combination of relatively high tenure diversity *and* high gender diversity *and* high ethnic diversity” (Mannix and Neale 2005, p. 695). More diversity can lead to more conflict, communication problems and stress. Social identity theory holds that individuals are more attracted to those similar to themselves, and will experience more cohesion and social integration in homogeneous groups. Consequently, such teams will perform better.

The information process approach is more optimistic. This theory holds that when individuals have access to other people from a variety of backgrounds, with a wide range of knowledge and experience, and who can make new networks and information available to them, this additional information will boost team performance regardless of any coordination problems. However, there would appear to be scant empirical evidence for this theory. Mannix and Neale (2005, p.32) conclude that conspicuous social category differences, such as gender and race “tend to be more likely to have negative effects on the ability of groups to function effectively”. They state further that homogeneous teams perform better when carrying out operational duties and implementing what is already known, whereas teams with diverse functional backgrounds, educations and personalities are better suited to innovative tasks and exploring new opportunities. However, it does appear from their review that a large amount of attention must be devoted to the group process of these very diverse teams if diversity is to have a positive effect. It is possible to conclude from the literature that for operational and routine tasks, and activities which are not highly innovative, gender homogeneity is likely to have a positive effect. Diversity is desirable when seeking to promote creativity and innovative problem-solving, so long as this is accompanied by explicit attention to the team process.

The fourth team attribute to be explored is experience with the police. Problems will arise if a leader lacks specific experience of an organization or its primary process (Bass 1990, p. 703; Kennedy 1985). Many surveys have documented the importance of technical competencies when it comes to an individual’s success as a leader. These technical competencies must be compatible with the organization. The above situational differences also have an impact on who will be accepted as a leader (Bass 1990, p. 100). According to social identity theory, one reason for the importance of matching is that people are most likely to become leaders if they comply with the group prototype, which is to say that they belong to the group and are of the same type. A possible explanation for this is provided by the attraction-selection-attrition (ASA) framework, which predicts that the individuals most likely to be attracted to, and selected for, positions within an organization are those who fit its values and identity. The framework also predicts that these individuals are more likely to stay with the

organization (Schneider 1987; Schneider et al. 1998; Turban and Keon 1993).

Finally, it is hypothesised that awareness of team performance is important, in terms of how aware employees are of the team’s performance, its objectives, and the extent to which their team is achieving these (Kaplan and Norton 2005). It is hypothesised that this awareness contributes to a team maintaining behaviour that will allow it to meet targets, or else adapting its behaviour in order to achieve the desired objectives or performance. This has prompted the following hypotheses on the psychosocial factors or characteristics of teams:

A team is more likely to achieve its performance objectives the more the team displays the following characteristics:

- Hypothesis 2.1: Psychological safety
- Hypothesis 2.2: Heedful interrelating
- Hypothesis 2.3: Gender homogeneity
- Hypothesis 2.4: Experience with the police as well as the specific work (investigation) being carried out by the team
- Hypothesis 2.5: Awareness of team performance in relation to performance objectives.

In summary, this study is concerned with testing the conceptual model shown in Figure 1.

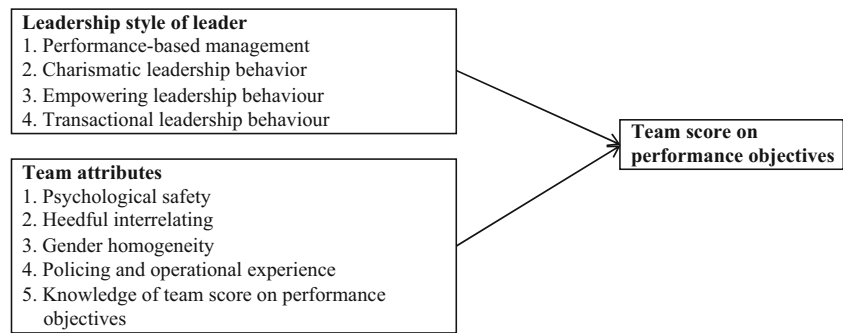
Methods

Sample

The hypotheses were tested through a study which looked at those units of the Utrecht Police with criminal investigation duties, including teams from both the regional Criminal Investigation Division and district level criminal investigation departments. Of the 296 people approached, 145 individuals (49%) across 26 teams completed the questionnaire. Respondents who worked in a team or a unit whose performance could not be clearly established were removed from the study, ultimately leaving usable data for 134 respondents. The study ($N = 134$) consisted of 97 male and 37 female respondents. The mean age was 45 and 78% were employed full-time. The mean employment period with the Utrecht Police was 22 years, with 12 years of regular policing experience and 9 years of experience as a detective. On average, the respondents had worked for 1.5 years for a different government organization or outside the public sector. Of the respondents, 61% had never worked outside the public sector. On average, each team had 20 members.

Comparing the respondents’ characteristics with those found in other police departments reveals that the Utrecht Police is comparable to its counterparts (Jaarverslag Nederlandse Politie and Internal Police). The characteristics compared were the proportion of employees with criminal

Fig. 1 Conceptual model of study



investigation duties, the number of employees in each criminal investigation team, diversity within the teams and employee experience and age.

Procedure

Independent measurement of the criterion variable was carried out in order to avoid common source and common method bias (Lindell and Whitney 2001). This was achieved by retrieving information from the organization's information systems, records of which exist for each team due to the agreements the police have made with the Ministry of Security and Justice.

Most of the predictors (leadership style and team characteristics) were measured using Likert scales. In this study, the measurement of the criterion variable and leadership style is not based on self-reporting, although self-report surveys have been found to be quite reliable research tools (Kakar 2003 based on Siegel 1998). By adopting this approach, this study addresses the issue raised by Kakar (2003, p. 53): "Further research should be conducted to examine whether officers' perceptions of their performance are in concordance with their actual performance".

Following a general inspection (of the skewness and kurtosis), an exploratory factor analysis was performed. We examined the internal consistency and validity of the scales by evaluating item-total correlations, inter-item correlations and performing an exploratory factor analysis (EFA). Based on Costello and Osborne (2005), the criteria used were Kaiser-Meyer-Olkin > .5, total variance explained >50%, Cronbach's α > .7, and item-total correlation > .3. Following this, correlation and multiple mixed regression analyses were performed to explore interrelationships in the data.

Measures

Team performance, the dependent variable, is based on the records of performance that must be kept for each team due to agreements made with the Ministry of Security and Justice. Scores were retrieved from the Utrecht Police Regional Planning Office. Each indicator is a percentage on a scale of

0–100. The dependent performance is the mean of a team's scores for the various objectives.

The following are some examples of agreed performance objectives analysed in this study:

- 80% of cases involving juvenile suspects sent to the judicial authorities within the required timescale;
- at least 80% of 'Priority 1 sex offence' cases passed to the public prosecutor within 30 days;
- at least three financial offence cases delivered to the public prosecutor annually;
- a maximum absence through illness rate of 6%.

Gender homogeneity was measured by asking respondents: "What is the male-female ratio on your team?"

Regular policing experience was measured by asking respondents: "How many years on average have the members of your team worked as a uniformed police officer?"

Awareness of team performance in relation to performance objectives was measured in terms of the total number of "known" answers recorded for the question: "Below you'll find five performance indicators. For each indicator, fill in a percentage representing the extent to which your team/department achieves its annual performance objectives."

The other predictors were measured using Likert scales. The internal consistency of the measuring instruments was tested using a factor analysis. Table 1 shows the Cronbach's α values. Some examples of instrument items are given below.

Performance-based management (4 items): "My coordinator/superior gives employees regular feedback on their behaviour and uses quantifiable performance indicators (e.g. length of investigation, number of files)". Selective use was made of the job characteristics inventory (Sims et al. 1976, p. 203) and Schriesheim's (1978) leadership role clarity, as described in Bearden, Netemeyer and Mobley (Bearden et al. 1993, p. 308–309).

Leadership style (charismatic, empowering and transactional) was assessed using the reports of subordinates, which are preferable to self-reports (De Vries 2012). De Hoogh's (2004) Charismatic Leadership in Organizations (CLIO) questionnaire (De Hoogh 2004; De Hoogh et al. 2004) was used.

Table 1 Cronbach's α , means, standard deviations and correlations between variables

	M	SD	1	2	3	4	5	6	7	8	9	10	11
Team performance	71%	7.30	1										
Performance-based management	3.34	.61	.07	(.70)									
1. CET Leadership	3.59	.56	.18*	.63**	(.95)								
2. Charismatic leadership behaviour	3.48	.71	.14	.61**	.94**	(.89)							
3. Empowering leadership	3.55	.55	.20*	.58**	.94**	.83**	(.84)						
Transactional leadership	3.73	.55	.16	.59**	.93**	.81**	.79**	(.88)					
4. Psychologically heedful	3.89	.47	.18*	.28**	.46**	.41**	.43**	.45**	(.85)				
5. Psychological safety	3.79	.58	.20*	.35**	.50**	.47**	.48**	.46**	.89**	(.75)			
6. Heedful interrelating	3.99	.48	.18*	.17*	.35**	.31**	.31**	.35**	.90**	.68**	(.72)		
Gender homogeneity	64%	20.10	.52**	.00	.18*	.11	.25**	.15	.17*	.23**	.15		
7. Regular policing experience in police organization	12 years	4.46	.18*	.05	-.04	-.07	-.01	-.02	-.12	-.04	-.13	.34**	
8. Knowledge of team score	2.28	1.50	.14	.05	-.14	-.13	-.15	-.11	-.04	-.00	-.03	-.12	.07

$N = 134$; * $p < .05$; ** $p < 0.01$ (2-sided). Cronbach's α on diagonal between parenthesis

Charismatic leadership (5 items): “Talks with employees about what they find important”.

Empowering leadership (6 items): “Gives employees a sense of working on an important, shared mission/assignment” (De Hoogh 2004).

Transactional leadership (6 items): “Ensures that the parameters are defined in a way that allows employees to do their work well” (De Hoogh 2004).

Table 1 shows that charismatic, empowering and transactional leadership have strong multicollinearity (.79–.83). A high correlation between comparable leadership styles was also found in other studies (e.g. Judge and Piccolo 2004), including studies that used the CLIO questionnaire (De Hoogh et al. 2005a; Belschak and Den Hartog 2010; De Vries 2012; Kalshoven et al. 2011). This might suggest that police leaders combine several leadership styles. Cockcroft (2014) underscores this point, writing in a section on leadership and team performance that “it is unlikely that one form of leadership will be appropriate for every set of organizational relationships”.

One way of dealing with multicollinearity is to perform an exploratory factor analysis (EFA) on the items, which in this case were the three identified types of leadership behaviour (see for example Schroeder 1990; Wang 1996; Ahmad et al. 2006). With regard to the EFA criteria described in the section titled ‘Procedure’, CET leadership style was found to be a reliable factor (alpha .95). In the mixed regression analysis, we use this combined factor (CET leadership style).

The same applies with respect to psychological safety and heedful interrelating. We combined the items of both factors (psychological safety and heedful interrelating were combined, giving us psychologically heedful) and

EFA showed a Cronbach's α of .85. Some examples of the items are as follows.

Psychological safety (6 items, 1 of which was removed): “Members of this team are able to raise problems and difficult issues”. The Edmondson scale was used (1999, p. 382).

Heedful interrelating with colleagues (7 items, 3 of which were removed): “Within my immediate circle, colleagues listen to what I have to say”. Two instruments were used in combination: those of Bijlsma-Frankema et al. (2008) and May et al. (2004).

The correlations between the factors of the model constructs used in the mixed regression analysis were lower or equal to 0.50 (see Table 1). This gives us confidence that the constructs being used are distinct from one another (that is, that they load on separate factors). Nevertheless, a factor analysis was performed on all items. This factor analysis showed that the constructs being used for the multiple regression analysis are distinct from one another. They load on separate factors, which suggests that we can use the three factors – (1) performance-based management, (2) CET leadership style and (3) psychologically heedful—in the multiple mixed regression analysis shown in Table 2.

Results

Inspection of the skewness and kurtosis of the factors shows them to be normally distributed. Alongside various psychometric characteristics of the measuring instruments, Table 1 shows the mutual correlation of the factors being examined.

We subsequently ran a mixed regression model using 134 observations (across 26 teams) to predict the performance of a team. We used a mixed regression model (instead of a classic

Table 2 Multiple mixed regression analysis of *team performance* as dependent variable

Variables	Model 1		Model 2		Model 3		Model 4	
	Beta	<i>p</i> value*	Beta	<i>p</i> value*	Beta	<i>p</i> value*	Beta	<i>p</i> value*
Regular policing experience in police organization	.02	.90						
Performance-based management	−.42	.70	−.45	.67				
Psychologically heedful	.49	.67	.61	.62	.58	.93		
CET Leadership style	2.29	.07	2.38	.06	2.06	.07	2.29	.03
Gender homogeneity	.15	.00	.16	.00	.16	.00	.16	.00
Knowledge of team score	.99	.00	1.05	.00	1.03	.00	1.04	.00
R	.69		.68		.68		.66	
R ²	.48		.46		.46		.43	
Adj. R ²	.43		.43		.43		.41	
F	10.79	.00	11.91	.00	13.46	.00	15.43	.00

* Two-tailed significance

regression model) to minimize the problem of dependency between observations (of respondents in the same team). With six independent variables and an N of 134, this study meets the requirements for satisfactory multiple regression analysis (Hair, Black, Babin and Anderson 2010, p. 176). We applied the backwards stepwise mixed regression procedure, until all remaining independent variables were significant on a 0.05 level. Table 2 shows the salient multiple mixed regression analysis results.

In summary, the outcome of the multiple mixed regression analysis (Table 2) shows that team performance does regress on CET leadership style (beta 2.29). The team factors that do appear to influence team performance are the proportion of men on the team or the degree of gender homogeneity (beta .16), and team members' awareness of their team score (beta 1.04). The regression analysis shows no evidence of the influence of performance-based management on team performance, nor was there evidence of the following team attributes affecting this: regular policing experience in the police or psychologically heedful (the combination of psychological safety and heedful interrelating).

Conclusion and Discussion

The main research question for this study was: “Which leadership style and psychosocial characteristics improve team performance?” The results of this study would suggest that a CET leadership style, gender homogeneity and a team's awareness of their score improve team performance. No evidence has been found to support the theory that regular policing experience in the police, performance-based management or the extent to which a team is psychologically heedful play a significant role in team performance.

Role of the Team Leader

With regard to the role of the team leader, the results show no evidence that a team leader's performance-based management influences team performance. Hypothesis 1.1 (performance-based management) must therefore be rejected. However, the results do show that team performance is influenced by how strongly the leader exhibits a CET leadership style (the combination of charismatic, empowering and transactional leadership behaviour). It can be concluded that the results of this study support hypotheses 1.2–1.4. The results also support Cockcroft's (2014) suggestion—that we should avoid oversimplifying the way that we conceptualize transactional and empowering leadership, and the relation between the two—in a surprising way. This study found that charismatic, empowering and transactional leadership behaviours are (based on EFA) in fact one variable or one leadership style. They work together to influence team performance. Moreover, this relationship between the three leadership styles is in line with previous more general studies (Den Hartog et al. 1997; De Hoogh 2004), as well as studies in the ‘police literature’. Yukl said: “some managers use some of the behaviors some of the time, but few managers use most of the behaviors whenever they are relevant” (cited by Cockcroft 2014). Yet according to this study, for those managers who want to influence their team to achieve agreed team performance objectives, it can help to make use of all three leadership styles in combination. Based on this study, we would be inclined to agree with Cockcroft that it is unlikely that only one form of leadership is appropriate for every set of organizational relationships, which in this case involved a requirement to achieve agreed performance objectives. In a survey of 155 police managers from California and Arizona, Kuykendall and Unsinger (1982) similarly demonstrated that a leadership style involving a high focus on the task, while also demonstrating a strong

emphasis on relationships, was the most common leadership style (cited by Cunningham et al. 2011). Our study suggests that this is equally important where team performance is concerned. A systematic review of the literature on police leadership carried out by Pearson-Goff and Herrington (2014) found that creating a shared vision and driving and managing change (characteristic of charismatic leadership) encourages organizational commitment and a tendency to look out for subordinates (characteristic of empowering leadership), as well as problem-solving (characteristic of transactional leadership). These are activities which effective police leaders engage in. The findings of this study are in line with Pearson-Goff and Herrington's suggestions, and we also address their call "for the need for robust research". Their suggestions are therefore given more substantial weight.

Team Attributes

With regard to team attributes, the results of this study do not support hypotheses 2.1 (psychological safety) or 2.2 (heedful interrelating). Based on the correlation table, we can say that there is a slightly significant correlation with team performance (.20 and .18), but there is no relation between the psychologically heedful attribute (the combination of psychological safety and heedful interrelating) and team performance according to the mixed regression analysis. Variation in team performance has been found to be more influenced by gender homogeneity, CET leadership style and team members' awareness of their team score.

These results show that gender homogeneity influences team performance, and therefore support hypothesis 2.3 (gender homogeneity). This is probably due to the fact that investigation and related work involve operational and routine activities that do not demand constant innovation. In such circumstances, homogeneity has a favourable effect on performance (Mannix and Neale 2005). Another possible reason for this is the otherwise limited diversity in the groups. Teams with multiple fault lines (e.g. diversity of age, background, culture and country of origin) perform less well (Mannix and Neale 2005). This aspect was not explicitly investigated, but the number of fault lines in the investigation teams in this study may be assumed to be small. One apparent implication of this study is therefore that it is important to aim for homogeneous teams with a view to better performance. According to the literature, homogeneous teams perform better when carrying out operational duties and implementing what is already known. This implication may have disadvantages in the long term, however, with people starting to view the primary process as too routine, for example. Some elements of investigative work demand increasingly innovative ideas and innovative problem-solving strategies. Team diversity then does appear to be important, but attention must also be given to the group process if diversity is to have a positive effect.

This study does not show overwhelming support for hypothesis 2.4, that is, experience in the police. Moreover, the specific work of the teams (investigation) does not appear to influence team performance based on the regression analysis, although the correlation table shows some significant correlation (.18). Research has found that problems will arise if a leader lacks specific experience with the organization or its primary process (Bass 1990, p. 703; Kennedy 1985). According to social identity theory, people are more likely to become leaders if they conform to the group prototype, which is to say that they belong to the group and are of the same type as the group. A possible explanation for this is provided by the attraction-selection-attrition (ASA) framework, which predicts that the individuals most likely to be attracted to, and selected for, positions within an organization are those who fit with its values and identity. The framework also predicts that these individuals are more likely to stay with the organization (Schneider 1987; Schneider et al. 1998; Turban and Keon 1993). The findings of this study show some support for this theory.

Finally, the results suggest that team performance is associated with a team's awareness of its team score. Hypothesis 2.5 is therefore supported by this study. The literature points to the importance of providing employees with feedback or information about how well the team is performing (Sims et al. 1976; Schriesheim et al. 1999). This study confirms this conclusion: awareness of performance is associated with actual performance. However, given the research outcomes of this study, it does not seem to be necessary for the team leader to play an explicit role in this respect by making use of performance-based management techniques. In fact, performance-based management does not appear to influence performance.

To summarize, gender homogeneous teams that are aware of their performance and have a team leader who displays a CET leadership style (a combination of charismatic, empowering and transactional leadership styles) appear to perform better. There is some indication that performance is further improved in teams characterized by mutual support and psychological safety.

Limitations

A surprising finding of this study has been that performance-based management does not influence team performance. This differs from expectations based on earlier research and performance-related literature. The reasons may be substantive and methodological in nature. A possible methodological cause is that much of the research suffers from *common source variance* (De Hoogh 2004; De Hoogh et al. 2005a; Lindell and Whitney 2001). In other words, in other studies, measurement of leadership style and the criterion variable was provided by the same source or respondent, thus increasing the apparent association

between variables. This effect was avoided in this study by measuring leadership style using employee responses, and the criterion variable using figures from the Regional Planning Office. The factors were therefore measured in a mutually independent way, reducing the association. However, this study has found that a CET leadership style influences team performance. There is therefore evidence that leadership is important, but none that performance-based management influences team performance.

Another limitation is the (partly) cross-sectional nature of this study. Although the dependent variable and the predictors were measured independently from one another, the study was conducted at one moment in time. We were therefore unable to assess the causal direction in the relationship between the predictors and team performance. It would be possible for follow-up research to use a longitudinal research design in order to address this issue.

A third limitation of this study is the limited nature of the sample, being restricted to police teams belonging to the Criminal Investigation Department of Utrecht in the Netherlands. The upside of such a sample is that many factors are homogenized. However, the probability of a coincidental outcome is greater with a limited sample, and caution is therefore called for in view of this limitation.

A further limitation of this study is that the sample was taken from a Dutch police unit with criminal investigation duties. The Netherlands is a relatively egalitarian country (Hofstede 1994). We may have obtained a different result from police organizations operating in more hierarchical, masculine countries, such as the United States or Japan (Hofstede 1994). This remains to be seen.

Practical Implications

This study lends support to the theory that investment in team members' awareness of team performance is an important practical implication. Such awareness would appear to be an important condition of team performance, with the implication that performance can be improved by optimizing feedback loops within teams. This optimization has no disadvantages, assuming that the defined objectives are actually the correct ones and that they are regularly adjusted to local requirements. Effective feedback loops keep team members properly informed about their performance and enable them to monitor themselves and their fellow team members accurately.

A second practical implication is that the general aim should be for teams which are gender homogeneous. This is particularly relevant when the work they are doing is reasonably routine, and innovations or novel problem-solving strategies are not in constant demand. However, if the nature of the work shifts to become more innovative and less clear-cut, then today's strength could become tomorrow's weakness. In such situations, more diversity is desirable, but this must proceed in parallel with careful attention to team processes.

A third implication that should be mentioned here is the importance of investing in team leaders who show a combination of charismatic, empowering and transactional leadership. Such team leaders talk to employees about what they feel is important, give employees a sense that they are working on an important shared mission or assignment, and/or ensure that the parameters are defined in a way that allows employees to do their work well.

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References

- Ahmad MH, Adnan R, Adnan N (2006) A comparative study on some methods for handling multicollinearity problems. *Matematika* 22: 109–119
- Alagna S, Reddy D, Collins D (1982) Perceptions of functioning in mixed-sex and male medical training groups. *J Med Educ* 57:801–803
- Baer M, Frese M (2003) Innovation is not enough: climates for initiative and psychological safety, process innovations and firm performance. *J Organ Behav* 24:45–68
- Baker G (2002) Distortion and risk in optimal incentive contracts. *J Hum Resour* 37(4):728–751
- Bass BM (1990) *Bass and Stogdill's handbook of leadership: Theory, research, & managerial applications* (3rd ed.). New York, Free Press.
- Bearden WO, Netemeyer RG & Mobley MF (1993) *Handbook of marketing scales: Multi item measures for marketing and consumer behavior research*. Newbury Park, Calif: Sage Publ.
- Belschak FD, Den Hartog DN (2010) Being proactive at work—blessing or bane? *The Psychologist* 23(11):886–889
- Bijlsma-Frankema KM, De Jong B, Van de Bunt G (2008) Heed, a missing link between trust, monitoring and performance in knowledge intensive teams. *Int J Hum Resour Manag* 19(1):19–40
- Callister RR, Kramer MW, Turban DB (1999) Feedback seeking following career transitions. *Acad Manag J* 42(4):429–438
- Cockcroft T (2014) Police culture and transformational leadership: outlining the contours of a troubled relationship. *Policing* 8(1):5–13
- Costello A & Osborne J (2005) Best practices in exploratory factor analysis: four recommendations for getting the most from your analysis. *Practical Assessment, research & Evaluation*, (10)7
- Cunningham MR, Jones JW, Behrens GM (2011) Psychological assessment of chief of police candidates: scientific and practice issues. *Journal of Police and Criminal Psychology* 26(2):77–86
- De Hoogh AHB (2004) *Personality and Charismatic Leadership: A Matter of Context*. VU.
- De Hoogh AHB, Den Hartog DN, Koopman PL (2004) De ontwikkeling van de CLIO: een vragenlijst voor charismatisch leiderschap in organisaties. *Gedrag en Organisatie* 17(5):354–381
- De Hoogh AH, Den Hartog DN, Koopman PL (2005a) Linking the big five-factors of personality to charismatic and transactional leadership: perceived dynamic work environment as a moderator. *J Organ Behav* 26(7):839–865
- De Hoogh AHB, Den Hartog DN, Koopman PL, Thierry H, Van den Berg PT, Van der Weide JG, Wilderom CPM (2005b) Leader

- motives, charismatic leadership, and subordinates' work attitude in the profit and voluntary sector. *Leadersh Q* 16:17–38
- De Vries RE (2012) Personality predictors of leadership styles and the self—other agreement problem. *Leadersh Q* 23(5):809–821
- Deinert A, Homan AC, Boer D, Voelpel SC, Gutermann D (2015) Transformational leadership sub-dimensions and their link to leaders' personality and performance. *Leadersh Q* 26(6):1095–1120
- Den Hartog DN, Van Muijen JJ, Koopman PL (1997) Transactional versus transformational leadership: an analysis of the MLQ. *J Occup Organ Psychol* 70:19–34
- Early PC, Mosakowski E (2000) Creating hybrid team cultures: an empirical test of transnational team functioning. *Acad Manag J* 43(1):26–49
- Edmondson A (1999) Psychological safety and learning behavior in work teams. *Adm Sci Q* 44
- Edmondson AC (2002) Managing the risk of learning: psychological safety in work teams. In: M. West. (Ed). *International Handbook of Organizational Teamwork*. London, Blackwell.
- Engel RS (2000) The effects of supervisory styles on patrol officer behaviour. *Police Q* 3:262–293
- Gonzalez JA, Denisi AS (2009) Cross-level effects of demography and diversity climate on organizational attachment and firm effectiveness. *J Organ Behav* 30:21–40
- Hair JF, Black WC, Babin BJ, & Anderson RE (2010) *Multivariate Data Analysis: A Global Perspective*. Pearson
- Herrington V, & Colvin A (2015). Police Leadership for Complex Times. *Policing, A Journal of Policy and Practice*, pav047.
- Hoffman L, Maier N (1961) Quality and acceptance of problem solutions by members of homogeneous and heterogeneous groups. *J Abnorm Soc Psychol* 62:401–407
- Hofstede G (1994) The business of international business is culture. *Int Bus Rev* 3:1–14
- Hogan J, Bennell C, Taylor A (2011) The challenges of moving into middle management: responses from police officers. *J Police Crim Psychol* 26(2):100–111
- Hood C (1995) The “new public management” in the 1980s: variations on a theme. *Acc Organ Soc* 20(2–3):93–109
- Ibarra H (1992) Homophile and differential returns: sex differences in network structure and access in an advertising firm. *Adm Sci Q* 37:422–447
- Jackson SE, Joshi A (2004) Diversity in social context: a multi-attribute, multilevel analysis of team diversity and sales performance. *J Organ Behav* 25(6):675–702
- Jackson SE, Joshi A, Erhardt N (2003) Recent research on team and organizational diversity: SWOT analysis and implications. *J Manag* 29:801–830
- Judge TA, Piccolo RF (2004) Transformational and transactional leadership: a meta-analytic test of their relative validity. *J Appl Psychol* 89(5):755–768
- Kahn WA (2001) Holding environments at work. *Journal of Applied Behavioral Science*. Sept., 260–279.
- Kakar S (2003) Race and police Officers' perceptions of their job performance: an analysis of the relationship between police Officers' race, education level, and job performance. *J Police Crim Psychol* 18(1):45–56
- Kalshoven K, Den Hartog DN, De Hoogh AH (2011) Ethical leadership at work questionnaire (ELW): Development and validation of a multidimensional measure. *Leadersh Q* 22(1):51–69
- Kaplan S, & Norton DP (1996) Using the balanced scorecard as a strategic management system. *Harvard Business Review*, Jan – Feb 75–85.
- Kaplan S, Norton DP (2005) The balanced scorecard: measures that drive performance. *Harv Bus Rev* 83(7/8):172–180
- Kennedy J (1985) Measuring leadership experiences based on relevant work history. *Paper, Conference of the American Psychological Association*, Los Angeles.
- Kingshott BF (2006) The role of management and leadership within the context of police service delivery. *Crim Justice Stud* 19:121–137
- Kochan T, Bezrukova K, Ely R, Jackson SE, Joshi A, Jehn KE, Leonard D, Levine D, Thomas D (2003) The effects of diversity on business performance: report of a feasibility study of the diversity research network. *Hum Resour Manag* 42:3–22
- Koeppl MD (2014) Women as leaders in policing. *J Police Stud/Cahiers Politie Stud* 2(2)
- Kuykendall J, Unsinger PC (1982) The leadership styles of police managers. *J Crim Just* 10(4):311–321
- Lievens, F., Van Geit, P., & Coetsier, P. (1997). Identification of transformational leadership qualities: an examination of potential biases. *Eur J Work Organ Psychol*
- Lindell MK, Whitney DJ (2001) Accounting for common method variance in cross-sectional research designs. *J Appl Psychol* 86(1):114–121
- Mannix E, Neale MA (2005) What differences make a difference? *Psychol Sci Public Interest* 6(2):31–55
- May DR, Gilson RL, Harter LM (2004) The psychological conditions of meaningfulness, safety and availability and the engagement of the human spirit at work. *J Occup Organ Psychol* 77:11–37
- Pearson-Goff M, Herrington V (2014) Police leadership: a systematic review of the literature. *Policing* 8(1):14–26
- Ragins BR, & Gonzalez JA (2003) Understanding diversity in organizations: Getting a grip on a slippery construct. In J. Greenberg (Ed.), *Organizational behavior: The state of the science* 2nd ed., New Jersey: Erlbaum. 125–164
- Richard OC, Barnett T, Dwyer S, Chadwick K (2004) Cultural diversity in management, firm performance, and the moderating role of entrepreneurial orientation dimensions. *Acad Manag J* 47:255–266
- Sacco JM, Schmitt N (2005) A dynamic multilevel model of demographic diversity and misfit effects. *J Appl Psychol* 90:203–231
- Schneider B (1987) The people make the place. *Pers Psychol* 40:437–454
- Schneider B, Smith DB, Taylor S, Fleenor J (1998) Personality and organizations: a test of the homogeneity of personality hypothesis. *J Appl Psychol* 83:462–470
- Schriesheim CA, Castro SL, Coglisier CC (1999) Leader-member exchange (LMX) research: a comprehensive review of theory, measurement, and data-analytic practices. *Leadership Quarterly* 10(1):63–113
- Schroeder MA (1990) Diagnosing and dealing with multicollinearity. *West J Nurs Res* 12(2):175–184
- Shipper F, Davy J (2002) A model and investigation of managerial skills, employees' attitudes and managerial performance. *Leadersh Q* 13:95–120
- Siegel L (1998) *Criminology: Theories, Patterns, and Typologies*. Belmont, CA: West
- Sims HP, Szilagyi AD, Keller RT (1976) The measurement of job characteristics. *Acad Manag J* 19(2):195–212
- Stewart GL (2010) The past twenty years: teams research is alive and well at the journal of management. *Journal of Management*, 36(4), 801–805.
- Tjosvold D, Yu Z, Chun H (2004) Team learning from mistakes: the contribution of cooperative goals and problem solving. *J Manag Stud* 41:1223–1245
- Tsui AS, Egan TD, O'Reilly CA (1992) Being different: relational demography and organizational attachment. *Adm Sci Q* 37:549–579
- Turban DB, Keon TL (1993) Organizational attractiveness: an interactionist perspective. *J Appl Psychol* 78:184–193
- Turner JC (1987) *Rediscovering the social group: A social categorization theory*. Oxford, UK: B. Backwell.
- Tynan R (2005) The effects of threat sensitivity and face giving on dyadic psychological safety and upward communication. *J Appl Soc Psychol* 35(2):223–247
- Van Ewijk AR (2012) Diversity within police forces in Europe: a case for the comprehensive view. *Policing* 6(1):76–92
- Van Knippenberg D, Sitkin SB (2013) A critical assessment of charismatic -transformational leadership research: back to the drawing board? *Acad Manag Ann* 7(1):1–60
- Van Knippenberg DV, De Dreu CKW, Homan AC (2004) Work group diversity and group performance: an integrative model and research agenda. *J Appl Psychol* 89:1008–1022

- Vanebo JO, Bjørkelo B, Aaserud T (2015) Police leadership development: intentions and critical success-factors. *Int Publ Adm Rev* 13(3–4):11–26
- Vollaard B (2003) Performance contracts for police forces. CPB document 31
- Wang GC (1996) How to handle multicollinearity in regression modeling. *J Bus Forecast Methods Syst* 15:23–27
- Webber SS, Donahue LM (2001) Impact of highly and less job-related diversity on work group cohesion and performance: a meta-analysis. *J Manag* 27:141–162
- Weick KE, Roberts KH (1993) Collective mind in organizations: heedful interrelating on flight decks. *Adm Sci Q* 38:357–381
- Wood W (1987) Meta-analytic review of sex differences in group performance. *Psychol Bull* 102:53–71
- Yang L-R, Yen H-F, Chiang Y-F (2012) A framework for assessing impacts of leadership competency on police project performance: mediating role of job satisfaction and moderating role of project type. *Police: Int J Police Strateg Manag* 35(3):528–550. doi:[10.1108/13639511211250785](https://doi.org/10.1108/13639511211250785)
- Yukl GA (2006) *Leadership in Organizations*. Pearson Education, 6th edition.
- Zhao JS, He N, Lovrich NP (2006) Pursuing gender diversity in police organizations in the 1990s: a longitudinal analysis of factors associated with the hiring of female officers. *Police Q* 9(4):463–485